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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/922,877	08/06/2001	Joseph R. Burns	OPT 29	9060

7590

02/20/2003

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EXAMINER

GONZALEZ, JULIO C

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 02/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/922,877

Applicant(s)

BURNS ET AL.

Examiner

Julio C. Gonzalez

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the two different capacitive components switchably interconnected as disclosed in claim 16 and the reactive component coupled to the output of the electric generator in series with the load as disclosed in claim 19 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-27 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The claims disclose the use of a formula (e.g. claim 2), which is stated that the impedance of the load is approximately equal for optimizing a generated power output. What would happen if the waves have an amplitude that is not in the working range of the device? Would the formula $1/(\omega)(C_E)$ still apply? How the system would know how and when to get an optimize generator power output? Does the formula applies all of the time and to any kind of wave amplitude?

Also, what is the value of the K constant (electromechanical coupling constant)?

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, what is meant by impedance having a value, which is a function of the period of the waves and the mass of the water in the shell? Does the impedance equals to the amplitude of the wave and the water contained inside the shell?

In claims 19, 20 and 25, what is meant by a “reactive component”? The rectifier?

What is considered to be “the other one” of the inductive and capacitive reactance?

In order to advance prosecution in the merits, the Prior Art will be applied as best understood by the examiner.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fredriksson et al in view of Smalser.

Fredriksson et al discloses a wave energy converter having a shell with a piston 17, a generator wherein the system is responsive to the relative motion between the piston and the shell (see figure 2).

However, Fredriksson does not disclose that load of the device may be varied.

On the other hand, Smalser discloses for the purpose of efficiently capturing varying energy in ocean waves that an ocean power generating system may have a device wherein the load is varied (see abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design a wave energy device as disclosed by Fredriksson et al and to modify the invention by varying the load discloses for the purpose of efficiently capturing varying energy in ocean waves as disclosed by Smalser.

8. Claims 14, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fredriksson et al and Smalser as applied to claim 14 above, and further in view of Yamamoto, Yushin et al (US Patent No 4,891,744).

The combined wave energy converter discloses all of the elements above. However, the combined wave energy converter does not disclose having an AC/DC converter and capacitive element.

On the other hand, Yamamoto, Yushin et al disclose for the purpose of relieving the control system from influence of load current ripples, a generator 3 having an AC/DC converter 1, a capacitance element 4 between the converter 1 and the load 5 (see figure 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined wave energy device as disclosed above and to modify the invention by placing a capacitor between the generator and the load for the purpose of relieving the control system from influence of load current ripples as disclosed by Yamamoto, Yushin et al.

9. Claims 13, 15-17, 19, 20 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fredriksson et al, Smalser and Yamamoto, Yushin et al as applied to claims 14 above, and further in view of Muljadi.

The combined wave energy converter discloses all of the elements above. However, the combined wave energy converter does not disclose using sensor or specifically using a rectifier.

On the other hand, Muljadi discloses for the purpose of making a device that produces an optimum level of power generation, a sensor 322, a generator 52 having a rectifier 94 (see figure 9).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined wave energy device as disclosed above and to modify the invention by using sensors for the purpose of making a device that produces an optimum level of power generation as disclosed by Muljadi.

Allowable Subject Matter

10. Claims 2-12, 18, 22, 26 and 27 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

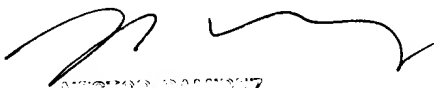
11. Claim 21 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julio C. Gonzalez whose telephone number is (703) 305-1563. The examiner can normally be reached on M-F (8AM-5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Julio C. Gonzalez
Examiner
Art Unit 2834

Jcg

February 13, 2003